UK COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Maintaining Home Landscapes and Newly Planted Trees and Shrubs during Drought

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For best quality landscapes, supplemental irrigation is almost always necessary during Kentucky summers. In the past few years there have been extreme variables in our rainfall and temperatures. Home gardeners need to be aware of weather conditions and use supplemental irrigation when there is not adequate rain during a 5 to 7 day period. Woody plants will likely use during a week the equivalent of 400 gal of water/1000 sq ft of landscape area. A common rule of thumb is that turf and woody plants need about one inch of rainfall or irrigation water/week from May through September.

Water Use by Plants

To manage irrigation properly, you need to know how fast water is lost by your trees or shrubs. Woody plants are obviously too dry when:

- leaves that were shiny become dull;
- bright green leaves fade to gray-green;
- leaves begin to wilt or curl;
- dead areas appear on the edges of leaves.

However, the same symptoms of wilting, curling and leaf chlorosis show up when plants are growing in soils that have been kept too wet. So check with your fingers to gauge the moisture levels in soil. Probe the soil and see! Even the healthiest shrubs and trees planted in the most ideal conditions need a substantial amount of time, care and proper irrigation to become established in the landscape. During the establishment period, roots are reaching out into the landscape soil and shoots and trunk grow more slowly than they did before transplanting. An established plant has developed a root system substantial enough to keep it alive without irrigation except during prolong drought.

Watering After Planting

Many plants die from too little or too much water during the first few months after planting. Those in well-drained soil are likely to get too little water, while those in poorly drained soil get too much. Determine when and how much to water by becoming familiar with the characteristics of the planting site and then strive to maintain constant moisture in the root ball but not saturation. The proper frequency and length of watering is rarely the same from one site to the next. The moisture level in the root ball is the deciding factor of whether irrigation is being correctly supplied.

Problems may arise if newly planted shrubs or trees are irrigated by systems designed to water turfgrass, flower beds or established plants. In well-drained soil, such systems cannot supply enough water deeply into the area of the rootball when placed on a timer of 20 minutes daily. New trees and shrubs transplanted during dry periods must be carefully watched. Water these new plants by hand with a hose or with a temporary micro-irrigation system designed specifically for them.
In poorly drained sites, shrubs and trees planted in or near regularly irrigated turf are especially susceptible to overwatering. Irrigation water and rainfall run over the soil surface and collect in the looser soil of the planting hole, drowning the tree's roots. Possible solutions include: (1) Locate new shrubs and trees away from the lawn and its irrigation system in their own specially irrigated beds; (2) Adjust the turf irrigation system so the root balls of the new plants do not become saturated which may result in under watered turf.

Irrigation Frequency

Newly installed plants - Newly installed plants require frequent irrigation to become established. Recently planted shrubs and trees can survive on 2 or 3 weekly applications, if soils drain sufficiently. Always check soil moisture before watering! Never guess. For the first 2- 3 years after planting trees and shrubs; nothing is more important to keeping them alive and reestablishing the root system than regular watering.

Established trees and shrubs - Established plants typically do not require frequent irrigation. For established plants, apply enough irrigation to wet the soil at least 6 to 12 inches deep rather than light amounts that wet only the surface. Deep watering provides water to a larger portion of the root system. Deep, infrequent irrigation could also improve drought resistance by promoting deeper, more extensive root systems in some cases. Depth of watering should be six to twelve inches for turf and bedding plants, and twelve inches for perennials, shrubs, and trees.

Maintenance - Examine the irrigation system and repair leaks promptly.

Weed Control - Keep weeds under control; weeds steal water from plants.

Fertilization - Don't fertilize newly planted trees and shrubs. Fertilization stimulates growth and can increase water needs.

Time of Day - Water early in the morning. Less water is lost to evaporation and wind drift in the morning because of cooler temperatures and less wind.

How to Apply Water to Trees?
Trees should be watered with soaker hoses rather than overhead. A slow running garden hose, trickle system, leaky pipe system or any other method you can think of to get water localized in the root ball area, at a very slow rate, for a couple hours is the best way to water trees. Directing a stream of water over the root system for a few minutes does little good if the soil is heavy. The amount of water entering the root system is limited by the infiltration capacity of soil; many soils can only take in water at a rate of one or two inches per hour and heavy clay soils may have run-off. Turn off your system, allow water to travel down into the soil and then turn on system again.

Heavy clay soil can only absorb 0.1 inch per hour. Therefore, the amount of time for soaking is much more important than the rate of application.
Drip irrigation systems are available and improve water infiltration because they can be timed to apply a small amount of water for a long period of time. In addition, since water is applied below the plant foliage, leaves do not get too wet and fewer disease problems develop.

Beware of Overwatering
Irrigation is used mainly to supplement rainfall rather than to provide all the moisture that plants need. Consequently, irrigation should never be done on some arbitrary, regular schedule such as daily, every other day, etc. Rather, water should be applied when soil is dry an inch below the Surface or when leaves first begin to develop wilt.
Overwatering causes shallow roots, nutrient loss, disease-susceptible plants, oxygen deficiency around plant roots, and very severe problems in landscape beds with weeds like nutsedge, nimblewill, bentgrass, annual bluegrass, oxalis and crabgrass. Roots must have a balance of water and air; overwatering excludes air. In most situations with established woody plants, enough water should be applied with irrigation to replace water that was used. If enough water is applied to penetrate deeply and to be absorbed before further irrigations, deep rooting will be encouraged and crown-rotting organisms minimized.
Overwatering stimulates damage to ornamentals such as Taxus, junipers, azaleas, rhododendrons, Japanese hollies, hemlock, dogwood, geraniums, chrysanthemums, etc. These plants are susceptible to diseases such as Phytophthora root rot and Pythium, diseases encouraged by overwatering. Other ornamentals such as pin oak, river birch, alder, willow, bald cypress, red maple and sweet gum are much more tolerant of overwatering. Woody plants planted in drainage areas and planted too deeply will be most severely affected by overwatering.
During summer vacations and other summer periods when you cannot give close attention to the landscape, consider having someone check your established woody plants every week and for new plantings every 3 -5 days, then irrigate if needed.

Excepts taken from – ID79 UK Home Lawn Irrigation, Coping with Drought in the Landscape University of Florida and Watering Trees and Shrubs Clemson Extension Service